* NOTICES *

CLAIMS

[Claim(s)]
[Claim 1]
It is the honeycomb catalyst support which comes to have the cellular structure object formed in the shape of [which has two or more cels which consist of a porous body which has much pores, and serve as passage of a fluid] a honeycomb, and the outer wall which was arranged so that the periphery section of said cellular structure object might be covered, and which consists of a porous body,
Honeycomb catalyst support characterized by coming to form in a part for the outermost periphery of predetermined thickness the sinking-in part into which the organic substance of nonaqueous solubility burned down by combustion or mineral matter sank among the porous bodies which constitute said cellular structure object.
[Claim 2]
Honeycomb catalyst support according to claim 1 with the permeability lower than other parts of the porous body from which said sinking-in part constitutes said cellular structure object specified at a following ceremony (1).
[Equation 1]

$$k = \frac{\mu \cdot L}{A} \cdot \left(\frac{\Delta Q}{\Delta P} \right) \qquad \cdots (1)$$

k：透過性（μm^2）

μ：20℃における空気の粘性係数（μPa・秒）

L：サンプル厚（mm）

A：サンプルの空気透過面積（cm^2）

△Q／△P：流出空気流量／圧縮空気圧の傾き（（cc／秒）／psi）

[Claim 3]
It is the honeycomb catalyst support which comes to have the cellular structure object formed in the shape of [which has two or more cels which consist of a porous body which has much pores, and serve as passage of a fluid] a honeycomb, and the outer wall which was arranged so that the periphery section of said cellular structure object might be covered, and which consists of a porous body,
Honeycomb catalyst support by which it is coming-to form interlayer who consists of mineral matter between periphery section [of said cellular structure object], and inner skin of said outer wall

characterized.
[Claim 4]
Honeycomb catalyst support according to claim 3 with the permeability lower than the porous body from which said interlayer constitutes said cellular structure object specified at a following ceremony (1).
[Equation 2]

$$k = \frac{\mu \cdot L}{A} \cdot \left(\frac{\Delta Q}{\Delta P} \right) \qquad \cdots (1)$$

k：透過性（μm^2）

μ：20℃における空気の粘性係数（μＰａ・秒）

Ｌ：サンプル厚（mm）

Ａ：サンプルの空気透過面積（cm^2）

△Ｑ／△Ｐ：流出空気流量／圧縮空気圧の傾き（（ｃｃ／秒）／ｐｓｉ）

[Claim 5]
Honeycomb catalyst support given in any 1 term of claims 1-4 said whose permeability of said sinking-in part or said interlayer is two or less [0.70-micrometer].
[Claim 6]
It is the honeycomb catalyst support which comes to have the cellular structure object formed in the shape of [which has two or more cels which consist of a porous body which has much pores, and serve as passage of a fluid] a honeycomb, and the outer wall which was arranged so that the periphery section of said cellular structure object might be covered, and which consists of a porous body,
Honeycomb catalyst support characterized by coming to form in a part for the outermost periphery of predetermined thickness the sinking-in part into which the organic substance of nonaqueous solubility burned down by combustion or mineral matter sank among the porous bodies which constitute said outer wall.
[Claim 7]
Honeycomb catalyst support according to claim 6 with the permeability lower than other parts of the porous body from which said sinking-in part constitutes said outer wall specified at a following ceremony (1).
[Equation 3]

$$k = \frac{\mu \cdot L}{A} \cdot \left(\frac{\Delta Q}{\Delta P} \right) \qquad \cdots (1)$$

k：透過性（μm^2）

μ：２０℃における空気の粘性係数（μＰａ・秒）

Ｌ：サンプル厚（ｍｍ）

Ａ：サンプルの空気透過面積（cm^2）

△Ｑ／△Ｐ：流出空気流量／圧縮空気圧の傾き（（ｃｃ／秒）／ｐｓｉ）

[Claim 8]
It is the honeycomb catalyst support which comes to have the cellular structure object formed in the shape of [which has two or more cels which consist of a porous body which has much pores, and serve as passage of a fluid] a honeycomb, and the outer wall which was arranged so that the periphery section of said cellular structure object might be covered, and which consists of a porous body,
Honeycomb catalyst support characterized by the organic substance of the nonaqueous solubility in which the whole porous body which constitutes said outer wall is burned down by combustion, or mineral matter being the sinking-in part into which it sank.
[Claim 9]
It is the honeycomb catalyst support which comes to have the cellular structure object formed in the shape of [which has two or more cels which consist of a porous body which has much pores, and serve as passage of a fluid] a honeycomb, and the outer wall which was arranged so that the periphery section of said cellular structure object might be covered, and which consists of a porous body,
Honeycomb catalyst support characterized by coming to form the coat which consists of an organic substance of nonaqueous solubility burned down by combustion, or mineral matter so that the periphery section of said outer wall may be covered.
[Claim 10]
Honeycomb catalyst support according to claim 9 with the permeability lower than the porous body from which said coat constitutes said outer wall specified at a following ceremony (1).
[Equation 4]

$$k = \frac{\mu \cdot L}{A} \cdot \left(\frac{\Delta Q}{\Delta P} \right) \qquad \cdots (1)$$

k：透過性（μm^2）

μ：２０℃における空気の粘性係数（μＰａ・秒）

Ｌ：サンプル厚（ｍｍ）

Ａ：サンプルの空気透過面積（cm^2）

△Ｑ／△Ｐ：流出空気流量／圧縮空気圧の傾き（（ｃｃ／秒）／ｐｓｉ）

[Claim 11]
Honeycomb catalyst support given in any 1 term of claims 6-10 said whose permeability of the outer wall with which the whole porous body which constitutes the outer wall containing said sinking-in part and said outer wall, or said coat was formed is two or less [0.04-micrometer].
[Claim 12]
claims 1 and 2 said whose organic substances are a petroleum system hydrocarbon oil, silicone oil, thermoplastics, thermosetting resin, waxes, or such mixture, and 5- honeycomb catalyst support given in 8 or 11 any 1 terms.
[Claim 13]
Honeycomb catalyst support given in claims 1 and 2 said whose mineral matter is a ceramic sol, alkyl silane compounds, or such mixture, or any 1 term of 5-11.
[Claim 14]
Honeycomb catalyst support given in claims 3-5 said whose mineral matter is one sort or two sorts or more of ceramics, or any 1 term of 9-11.
[Claim 15]
Honeycomb catalyst support given in any 1 term of claims 9-11 said whose organic substances are rubber of thermoplastics, thermosetting resin, a wax, nature, or composition.
[Claim 16]
In the cellular structure object formed in the shape of [which has two or more cels which consist of a porous body which has much pores, and serve as passage of a fluid] a honeycomb Among the porous bodies which constitute said cellular structure object, to a part for the outermost periphery of predetermined thickness The manufacture approach of the honeycomb catalyst support characterized by arranging the outer wall which consists of a porous body so that the periphery section of said cellular structure object may be covered after sinking in the organic substance of nonaqueous solubility burned down by combustion, or mineral matter and forming a sinking-in part.
[Claim 17]
The manufacture approach of the honeycomb catalyst support characterized by arranging the outer wall which consists of a porous body so that said interlayer may be covered after making mineral matter adhere to the periphery section of the cellular structure object formed in the shape of [which has two or more cels which consist of a porous body which has much pores, and serve as passage of a fluid] a honeycomb and forming an interlayer in it.
[Claim 18]
After arranging the outer wall which consists of a porous body so that the periphery section of the cellular structure object formed in the shape of [which has two or more cels which consist of a porous body which has much pores, and serve as passage of a fluid] a honeycomb may be covered, The manufacture approach of the honeycomb catalyst support characterized by sinking into a part for the outermost periphery of predetermined thickness the organic substance of nonaqueous solubility

burned down by combustion, or mineral matter, and forming a sinking-in part in it among the porous bodies which constitute said outer wall.
[Claim 19]
The manufacture approach of the honeycomb catalyst support characterized by to sink in the organic substance of nonaqueous solubility burned down by combustion in the whole porous body which constitutes said outer wall, or mineral matter, and to form a sinking-in part after arranging the outer wall which consists of a porous body so that the periphery section of the cellular structure object formed in the shape of [which has two or more cels which consist of a porous body which has much pores, and serve as passage of a fluid] a honeycomb may be covered.
[Claim 20]
The manufacture approach of the honeycomb catalyst support characterized by to make the organic substance of nonaqueous solubility burned down by combustion, or mineral matter adhere, and to form a coat so that the periphery section of said outer wall may be covered after arranging the outer wall which consists of a porous body so that the periphery section of the cellular structure object formed in the shape of [which has two or more cels which consist of a porous body which has much pores, and serve as passage of a fluid] a honeycomb may be covered.

[Translation done.]

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] It is the typical sectional view which cut the honeycomb catalyst support of this invention along with the medial axis.
[Drawing 2] It is the sectional view which cut the honeycomb catalyst support equipped with the outer wall at the flat surface perpendicular to the medial axis.
[Drawing 3] It is the sectional view which cut the cellular structure object which constitutes the honeycomb catalyst support of this invention at the flat surface perpendicular to the medial axis.
[Drawing 4] It is the typical sectional view of the cellular structure object of the structure which ******(ed) two or more cels by ******** alternately.
[Drawing 5] It is the typical sectional view which cut the honeycomb catalyst support of this invention along with the medial axis.
[Drawing 6] It is the typical sectional view which cut the honeycomb catalyst support of this invention along with the medial axis.
[Drawing 7] It is the typical sectional view which cut the honeycomb catalyst support of this invention along with the medial axis.
[Description of Notations]
1, 21, 41 [-- 5 A septum 25 / -- 6 Honeycomb catalyst support 26 / -- An outer wall, 7 / -- An interlayer, 8 / -- A coat, 42 -- ******.] -- A cellular structure object, 1a, 6a -- A part besides sinking-in part, 1b, and 6b--, 3, 23, 43 -- A cel, 4, 24, 44

[Translation done.]

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the honeycomb catalyst support which comes to have the cellular structure object formed in the shape of [which has two or more cels used as the passage of a fluid] a honeycomb, and the outer wall arranged so that the periphery section of the cellular structure object might be covered, and its manufacture approach. It is related with the honeycomb catalyst support which can prevent effectively generating of a crack and the exfoliation of an outer wall in an outer wall, and can equalize concentration distribution of the catalyst component in each part of honeycomb catalyst support in a catalyst support process in detail, and its manufacture approach.
[0002]
[Description of the Prior Art] The catalyst support (honeycomb catalyst support) of the honeycomb structure which consists of a ceramic is used as catalyst support for supporting the catalyst which purifies nitrogen oxides (NOX), a carbon monoxide (CO), a hydrocarbon (HC:Hydro Carbon), etc. in the exhaust gas of an automobile. While honeycomb catalyst support consists of a porous body which has much pores, catalytic liquid is infiltrated into the interior of two or more of the cels (septum which divides a cel), it can dry and a catalyst can be made to be formed in the shape of [which has two or more cels used as the passage of a fluid] a honeycomb, and to support by the ability being burned.
[0003] And if it is in the recent years when the emission control of a diesel-power-plant vehicle poses a problem, since it carries in a large-sized car with the large displacement of a truck, a bus, etc., there is much need of large-sized honeycomb catalyst support. Although such large-sized honeycomb catalyst support is a honeycomb structure object divided by the very thin septum therefore, it has the problem that a mechanical strength is low. Then, in large-scale honeycomb structure objects including honeycomb catalyst support, in order to raise a mechanical strength and to prevent deformation, breakage, etc. at the time of use, arranging a reinforcement means is performed. For example, as shown in drawing 2 , forming an outer wall 26 in the periphery section of the cellular structure object 21 of honeycomb structure, and raising a mechanical strength is proposed (for example, patent reference 1 and patent reference 2 reference).
[0004]
[Patent reference 1]
The utility model No. 2090481 official report
[Patent reference 2]
The patent No. 2604876 official report
[0005]
[Problem(s) to be Solved by the Invention] However, if it was in the honeycomb catalyst support 25 equipped with the above outer walls 26, catalytic liquid was infiltrated into the interior of two or more cels 23 (septum 24 which divides a cel 23), this was dried and there was a problem that a crack occurred in an outer wall 26, or an outer wall 26 exfoliated from the cellular structure object 21 in it, in the catalyst support process which can be burned. Moreover, in said catalyst support process, there was a problem that concentration distribution of the catalyst component in each part of the honeycomb catalyst support 25 became an ununiformity. While the catalyst concentration near the

periphery section of the honeycomb catalyst support 25 turned into high concentration, more specifically, the phenomenon in which the catalyst concentration near the core of the honeycomb catalyst support 25 turned into low concentration had arisen.
[0006] The place which this invention is made in view of the trouble of the above conventional techniques, and is made into the purpose is in a catalyst support process about the honeycomb catalyst support equipped with the outer wall to offer the honeycomb catalyst support which can prevent effectively generating of a crack and the exfoliation of an outer wall in an outer wall, and can equalize concentration distribution of the catalyst component in each part of honeycomb catalyst support, and its manufacture approach.
[0007]
[Means for Solving the Problem] As a result of inquiring wholeheartedly in order to solve an above-mentioned technical problem, this invention person completed a header and this invention for the ability of the above-mentioned purpose to be attained in the cellular structure object which constitutes honeycomb catalyst support, when the organic substance of nonaqueous solubility burned down by combustion in a part for the outermost periphery of predetermined thickness or mineral matter formed the sinking-in part into which it sank among the porous bodies which constitute a cellular structure object. That is, this invention offers the following honeycomb catalyst support and its manufacture approach.
[0008] [1] The cellular structure object formed in the shape of [which has two or more cels which consist of a porous body which has much pores, and serve as passage of a fluid] a honeycomb, It is the honeycomb catalyst support which comes to have the outer wall which was arranged so that the periphery section of said cellular structure object might be covered, and which consists of a porous body. Honeycomb catalyst support characterized by coming to form in a part for the outermost periphery of predetermined thickness the sinking-in part into which the organic substance of nonaqueous solubility burned down by combustion or mineral matter sank among the porous bodies which constitute said cellular structure object.
[0009] [2] Honeycomb catalyst support given in the above [1] with the permeability lower than other parts of the porous body from which said sinking-in part constitutes said cellular structure object specified at a following ceremony (1).
[Equation 5]

$$k = \frac{\mu \cdot L}{A} \cdot \left(\frac{\Delta Q}{\Delta P} \right) \qquad \cdots (1)$$

k：透過性（μm^2）

μ：２０℃における空気の粘性係数（μＰａ・秒）

Ｌ：サンプル厚（ｍｍ）

Ａ：サンプルの空気透過面積（cm^2）

△Ｑ／△Ｐ：流出空気流量／圧縮空気圧の傾き（（ｃｃ／秒）／ｐｓｉ）

[0010] [3] The cellular structure object formed in the shape of [which has two or more cels which consist of a porous body which has much pores, and serve as passage of a fluid] a honeycomb, Honeycomb catalyst support by which is the honeycomb catalyst support which comes to have the outer wall which was arranged so that the periphery section of said cellular structure object might be covered, and which consists of a porous body, and it is coming-to form interlayer who consists of mineral matter between periphery section [of said cellular structure object], and inner skin of said outer wall characterized.

[0011] [4] Honeycomb catalyst support given in the above [3] with the permeability lower than the porous body from which said interlayer constitutes said cellular structure object specified at a following ceremony (1).
[Equation 6]

$$k = \frac{\mu \cdot L}{A} \cdot \left(\frac{\Delta Q}{\Delta P} \right) \qquad \cdots (1)$$

k：透過性（μm^2）

μ：20℃における空気の粘性係数（μＰａ・秒）

Ｌ：サンプル厚（ｍｍ）

Ａ：サンプルの空気透過面積（cm^2）

△Ｑ／△Ｐ：流出空気流量／圧縮空気圧の傾き（（ｃｃ／秒）／ｐｓｉ）

[0012] [5] Honeycomb catalyst support given in either of above-mentioned [1] - [4] said whose permeability of said sinking-in part or said interlayer is two or less [0.70-micrometer].
[0013] [6] The cellular structure object formed in the shape of [which has two or more cels which consist of a porous body which has much pores, and serve as passage of a fluid] a honeycomb, It is the honeycomb catalyst support which comes to have the outer wall which was arranged so that the periphery section of said cellular structure object might be covered, and which consists of a porous body. Honeycomb catalyst support characterized by coming to form in a part for the outermost periphery of predetermined thickness the sinking-in part into which the organic substance of nonaqueous solubility burned down by combustion or mineral matter sank among the porous bodies which constitute said outer wall.
[0014] [7] Honeycomb catalyst support given in the above [6] with the permeability lower than other parts of the porous body from which said sinking-in part constitutes said outer wall specified at a following ceremony (1).
[Equation 7]

$$k = \frac{\mu \cdot L}{A} \cdot \left(\frac{\Delta Q}{\Delta P} \right) \qquad \cdots (1)$$

k：透過性（μm^2）

μ：20℃における空気の粘性係数（μＰａ・秒）

Ｌ：サンプル厚（ｍｍ）

Ａ：サンプルの空気透過面積（cm^2）

△Ｑ／△Ｐ：流出空気流量／圧縮空気圧の傾き（（ｃｃ／秒）／ｐｓｉ）

[0015] [8] The cellular structure object formed in the shape of [which has two or more cels which

consist of a porous body which has much pores, and serve as passage of a fluid] a honeycomb, It is the honeycomb catalyst support which comes to have the outer wall which was arranged so that the periphery section of said cellular structure object might be covered, and which consists of a porous body. Honeycomb catalyst support characterized by the organic substance of the nonaqueous solubility in which the whole porous body which constitutes said outer wall is burned down by combustion, or mineral matter being the sinking-in part into which it sank.
[0016] [9] The cellular structure object formed in the shape of [which has two or more cels which consist of a porous body which has much pores, and serve as passage of a fluid] a honeycomb, So that it may be the honeycomb catalyst support which comes to have the outer wall which was arranged so that the periphery section of said cellular structure object might be covered, and which consists of a porous body and the periphery section of said outer wall may be covered Honeycomb catalyst support characterized by coming to form the coat which consists of an organic substance of nonaqueous solubility burned down by combustion, or mineral matter.
[0017] [10] Honeycomb catalyst support given in the above [9] with the permeability lower than the porous body from which said coat constitutes said outer wall specified at a following ceremony (1).
[Equation 8]

$$k = \frac{\mu \cdot L}{A} \cdot \left(\frac{\Delta Q}{\Delta P} \right) \qquad \cdots (1)$$

k：透過性（μm^2）

μ：２０℃における空気の粘性係数（μＰａ・秒）

Ｌ：サンプル厚（ｍｍ）

Ａ：サンプルの空気透過面積（cm^2）

△Ｑ／△Ｐ：流出空気流量／圧縮空気圧の傾き（（ｃｃ／秒）／ｐｓｉ）

[0018] [11] said -- sinking in -- a part -- containing -- an outer wall -- said -- an outer wall -- constituting -- a porous body -- the whole -- or -- said -- a coat -- forming -- having had -- an outer wall -- said -- permeability -- 0.04 -- micrometer -- two -- less than -- it is -- the above -- [-- six --] - [-- ten --] -- either -- a publication -- a honeycomb catalyst -- support .
[0019] [12] The above [1] said whose organic substances are a petroleum system hydrocarbon oil, silicone oil, thermoplastics, thermosetting resin, waxes, or such mixture, [2], [5] - [8], or honeycomb catalyst support given in either of [11].
[0020] [13] Honeycomb catalyst support given in either of above [said whose mineral matter is a ceramic sol, alkyl silane compounds, or such mixture] [1], [2], or [5] - [11].
[0021] [14] Honeycomb catalyst support given in either of above-mentioned [3] - [5] or [9] - [11] said whose mineral matter is one sort or two sorts or more of ceramics.
[0022] [15] Honeycomb catalyst support given in either of above-mentioned [9] - [11] said whose organic substances are rubber of thermoplastics, thermosetting resin, a wax, nature, or composition.
[0023] [16] In the cellular structure object formed in the shape of [which has two or more cels which consist of a porous body which has much pores, and serve as passage of a fluid] a honeycomb Among the porous bodies which constitute said cellular structure object, to a part for the outermost periphery of predetermined thickness The manufacture approach of the honeycomb catalyst support characterized by arranging the outer wall which consists of a porous body so that the periphery section of said cellular structure object may be covered after sinking in the organic substance of nonaqueous solubility burned down by combustion, or mineral matter and forming a sinking-in part.
[0024] [17] The manufacture approach of the honeycomb catalyst support characterized by arranging

the outer wall which consists of a porous body so that said interlayer may be covered after making mineral matter adhere to the periphery section of the cellular structure object formed in the shape of [which has two or more cels which consist of a porous body which has much pores, and serve as passage of a fluid] a honeycomb and forming an interlayer in it.
[0025] [18] After arranging the outer wall which consists of a porous body so that the periphery section of the cellular structure object formed in the shape of [which has two or more cels which consist of a porous body which has much pores, and serve as passage of a fluid] a honeycomb may be covered, The manufacture approach of the honeycomb catalyst support characterized by sinking into a part for the outermost periphery of predetermined thickness the organic substance of nonaqueous solubility burned down by combustion, or mineral matter, and forming a sinking-in part in it among the porous bodies which constitute said outer wall.
[0026] [19] The manufacture approach of the honeycomb catalyst support characterized by to sink in the organic substance of nonaqueous solubility burned down by combustion in the whole porous body which constitutes said outer wall, or mineral matter, and to form a sinking-in part after arranging the outer wall which consists of a porous body so that the periphery section of the cellular structure object formed in the shape of [which has two or more cels which consist of a porous body which has much pores, and serve as passage of a fluid] a honeycomb may be covered.
[0027] [20] The manufacture approach of the honeycomb catalyst support characterized by to make the organic substance of nonaqueous solubility burned down by combustion, or mineral matter adhere, and to form a coat so that the periphery section of said outer wall may be covered after arranging the outer wall which consists of a porous body so that the periphery section of the cellular structure object formed in the shape of [which has two or more cels which consist of a porous body which has much pores, and serve as passage of a fluid] a honeycomb may be covered.
[0028]
[Embodiment of the Invention] Hereafter, the gestalt of operation of the honeycomb catalyst support of this invention is explained concretely, referring to a drawing.
[0029] this invention person faced developing the honeycomb catalyst support of this invention, and first, in the catalyst support process, the crack occurred or he examined why an outer wall exfoliates from a cellular structure object in an outer wall. consequently, in infiltrating catalytic liquid into the interior of two or more cels (septum which divides a cel) and drying this in a catalyst support process Since desiccation advances from the periphery side of honeycomb catalyst support for the reasons of the heating objects (heater etc.) of a dryer being installed in the periphery side of honeycomb catalyst support, In connection with this, catalytic liquid moves to the periphery side (outer wall side) of honeycomb catalyst support, and it originates in concentration distribution of the catalyst component in each part of honeycomb catalyst support becoming an ununiformity. It found out that a crack will occur in an outer wall or an outer wall will exfoliate from a cellular structure object.
[0030] If it explains more concretely, since the catalyst concentration near the periphery section of honeycomb catalyst support turns into high concentration, according to the above-mentioned phenomenon, this high-concentration catalyst component crystallizes thru/or expands at the time of desiccation, a crack will occur in an outer wall or an outer wall will exfoliate from a cellular structure object in it.
[0031] As mentioned above, since it is a thing resulting from catalytic liquid moving with the desiccation in a catalyst support process at the periphery side (outer wall side) of honeycomb catalyst support that an outer wall exfoliates from a cellular structure object, in order for a crack to occur in an outer wall, or to prevent such a situation, it will be said that what is necessary is just to control the migration by the side of the periphery of the honeycomb catalyst support of catalytic liquid (outer wall side).
[0032] Then, in this invention, we decided that the organic substance of nonaqueous solubility burned down by combustion in a part for the outermost periphery of predetermined thickness or mineral matter forms the sinking-in part into which it sank among the porous bodies which constitute a cellular structure object in the cellular structure object which constitutes honeycomb catalyst support. Since the migration by the side of the periphery of the honeycomb catalyst support of catalytic liquid (outer wall side) will be controlled though the heating object of a dryer is arranged at the periphery side of honeycomb catalyst support at the time of the desiccation in a catalyst support

process if it does in this way, a crack can occur in an outer wall or the situation where an outer wall exfoliates from a cellular structure object can be prevented effectively. Moreover, as this result, while the catalyst concentration near the periphery section of honeycomb catalyst support turns into high concentration, the problem that the catalyst concentration near the core of honeycomb catalyst support turns into low concentration can also be avoided, and it becomes possible to equalize concentration distribution of the catalyst component in each part of honeycomb catalyst support.
[0033] (1) The 1st embodiment
The 1st embodiment of this invention is the honeycomb catalyst support 5 in which the organic substance of nonaqueous solubility burned down by combustion in a part for the outermost periphery of predetermined thickness or mineral matter comes to form the sinking-in part into which it sank among the porous bodies which constitute the cellular structure object 1, as shown in drawing 1 . In such honeycomb catalyst support 5, permeability becomes low rather than other partial 1b of the porous body from which sinking-in partial 1a constitutes the cellular structure object 1. In addition, the "permeability" told to this invention is prescribed by the following formula (1) (the detail of a measuring method is explained in the term of an example).
[Equation 9]

$$k = \frac{\mu \cdot L}{A} \cdot \left(\frac{\Delta Q}{\Delta P} \right) \qquad \cdots (1)$$

k：透過性（μm^2）

μ：20℃における空気の粘性係数（μPa・秒）

L：サンプル厚（mm）

A：サンプルの空気透過面積（cm^2）

△Q／△P：流出空気流量／圧縮空気圧の傾き（（cc／秒）／psi）

[0034] For example, as shown in drawing 3 , the cellular structure object 1 consists of a porous body which has much pores, and is formed by being divided by the very thin septum 4 in the shape of [which has two or more cels 3 used as the passage of a fluid] a honeycomb. Although especially the quality of the material is not limited, since it is required to be the porous body which has much pores, the sintered compact which consists of a ceramic, and the sintered compact which consists of cordierite especially are usually used suitably. The sintered compact which consists of cordierite has a small coefficient of thermal expansion, and it is desirable in the point of excelling in thermal shock resistance or a mechanical strength. Extrusion molding of the plastic matter adjusted to suitable viscosity, for example is carried out using the mouthpiece which has a desired cel configuration, septum thickness, and a cel consistency, it dries and such a cellular structure object can be manufactured by the approach of calcinating etc.
[0035] The cellular structure object 41 of the structure which ******(ed) alternately the inlet-port side edge side B of two or more cels 43 as shown in drawing 4 , and the outlet side end face C by ******** 42 as a cellular structure object, for example may be used. If processed gas G1 is introduced into a cel 43 from the inlet-port side edge side B according to the cellular structure object 41 of such structure Since the processed gas G2 which flowed into the cel 43 which penetrates the porous septum 44 and adjoins is discharged from the outlet side end face C while uptake of dust or the particulate is carried out in a septum 44, The processed gas G2 by which the dust in processed gas G1 and a particulate were separated can be obtained. That is, in the point which can add the function as a filter to catalyst support, it is desirable.
[0036] In a cellular structure object, the honeycomb catalyst support of this embodiment can be

manufactured by arranging the outer wall which consists of a porous body so that the periphery section of a cellular structure object may be covered, after sinking into a part for the outermost periphery of predetermined thickness the organic substance of nonaqueous solubility burned down by combustion, or mineral matter and forming a sinking-in part in it among the porous bodies which constitute a cellular structure object.

[0037] Since an organic substance is burned down in addition to the ability to make the permeability of the porous body which constitutes a cellular structure object fall when [in a catalyst support process] it can be burned when an organic substance is infiltrated, there is an advantage that an organic substance unnecessary originally does not remain inside a honeycomb catalyst object (the thing in the condition that the catalyst was supported by honeycomb catalyst support is meant). Moreover, in the point that thermal shock resistance does not fall by a honeycomb catalyst object not serving as high rigidity beyond the need, it is desirable.

[0038] Although the above-mentioned organic substance needs to be nonaqueous solubility in order to prevent dissolving at the time of sinking [of catalytic liquid] in, it may be burned down by combustion. It is because migration of catalytic liquid can be prevented, so the effectiveness of this invention can be acquired if permeability is low at least in the case of the desiccation (about 50-150 degrees C) in a catalyst support process. Therefore, even if the organic substance which sank in on the occasion of subsequent baking (about 400-600 degrees C) is burned down by combustion, a problem does not arise. As the above-mentioned organic substance, a petroleum system hydrocarbon oil, silicone oil, thermoplastics (an ethylene acetic-acid vinyl copolymer, polyethylene, etc.), thermosetting resin (phenol resin, epoxy resin, etc.), waxes (paraffin wax, ** and a vegetable wax, synthetic wax, etc.), or such mixture can be used suitably, for example.

[0039] The permeability of the porous body which constitutes a cellular structure object can be made to fall also by infiltrating mineral matter instead of the above-mentioned organic substance. As the above-mentioned mineral matter, ceramic sols (a silica sol, alumina sol, etc.), alkyl silane compounds, or such mixture can be used suitably, for example.

[0040] In addition, although a sinking-in part is formed in a part for the outermost periphery of predetermined thickness among the porous bodies which constitute a cellular structure object, as long as the sinking-in part is formed that there is no clearance in a part for the outermost periphery of a cellular structure object, especially the thickness is not limited. For example, the sinking-in part may be formed to near the core of a cellular structure object.

[0041] The outer wall which consists of a porous body so that this may be covered is arranged in the periphery section of the cellular structure object with which the above-mentioned sinking-in part was formed.

[0042] After the above outer walls apply the ceramic coat material for outer wall formation to the periphery section of a cellular structure object, they can be arranged by the approach of drying this etc. Here, since hot baking (if it is cordierite about 1400-1450 degrees C) was not performed but it has stopped only to low-temperature desiccation (20-120 degrees C) comparatively, the organic substance with which it sank in is not burned down. However, as matter to infiltrate, when using mineral matter, further hot desiccation may be carried out. In addition, what made the ingredient which uses as a principal component the powder which comes to grind a ceramic sintered compact (especially cordierite sintered compact) as ceramic coat material for outer wall formation the shape of a slurry can be used suitably.

[0043] Although especially the thickness of an outer wall is not limited, it is usually about 0.3-2.0mm. If smaller than 0.3mm, since an outer wall will become thin, maintenance of the reinforcement of honeycomb catalyst support may become difficult. Since it will become easy to attach the temperature gradient within an outer wall if larger than 2.0mm, thermal shock resistance may fall.

[0044] The effectiveness of this invention is enjoyable with the 2nd hung up over the following besides the 1st embodiment of the above - the 4th embodiment. In addition, the following terms are mentioned only about the focus of the 2nd - the 4th embodiment. Parts other than this focus can constitute completely like the 1st embodiment.

[0045] (2) The 2nd embodiment

The 2nd embodiment of this invention is the honeycomb catalyst support 5 which comes to form the

interlayer 7 who consists of mineral matter between the periphery section of the cellular structure object 1, and the inner skin of an outer wall 6, as shown in drawing 5 . Namely, as for a cellular structure object, unlike the 1st embodiment having formed the sinking-in part in some cellular structure objects, this embodiment forms an interlayer separately. In such honeycomb catalyst support 5, permeability becomes low rather than the porous body from which an interlayer 7 constitutes the cellular structure object 1.

[0046] The honeycomb catalyst support of this embodiment can be manufactured by arranging the outer wall which consists of a porous body so that the interlayer may be covered, after making mineral matter adhere to the periphery section of a cellular structure object and forming an interlayer in it.

[0047] An organic substance is burned down and the honeycomb catalyst support of this operation gestalt has [since a cellular structure object is what forms an interlayer separately,] a possibility that exfoliation with a cellular structure object and an outer wall may occur, when [in a catalyst support process] the matter which constitutes an interlayer is used as the organic substance burned down by combustion, and it can be burned. Therefore, the interlayer in this operation gestalt needs to constitute with mineral matter.

[0048] Although it is not limited especially as long as the mineral matter which constitutes an interlayer has permeability lower than the porous body which constitutes a cellular structure object One sort or two sorts or more of ceramics (a silica, alumina, etc.) can be used suitably. Specifically After applying to the periphery section of a cellular structure object the ceramic slurry for interlayer formation which made the ingredient which uses ceramic powder as a principal component the shape of a slurry, it is possible to arrange an interlayer by the approach of drying this and calcinating by request etc. In order to make an interlayer's permeability fall further, ceramic sols (a silica sol, alumina sol, etc.) etc. may be used together. After spreading, desiccation, etc. making the ceramic slurry for interlayer formation etc. the periphery section of a cellular structure object and producing an interlayer in it, arbitration can make the interlayer able to do count sinking in of the ceramic sol, and permeability can also be made to specifically fall to it further.

[0049] In the 1st embodiment mentioned above and the 2nd embodiment, it is desirable to make permeability of a sinking-in part or an interlayer or less [0.70-micrometer] into two. If permeability exceeds 2 [0.70-micrometer], the migration by the side of the periphery of the honeycomb catalyst support of catalytic liquid (outer wall side) cannot be controlled, a crack may occur in an outer wall or an outer wall may exfoliate from a cellular structure object in it. In addition, the permeability of the porous body which constitutes a cellular structure object is usually about [0.8-5.0 micrometers] two.

[0050] (3) The 3rd embodiment

The 3rd embodiment of this invention is the honeycomb catalyst support 5 which comes to form in a part for the outermost periphery of predetermined thickness sinking-in partial 6a into which the organic substance of nonaqueous solubility burned down by combustion or mineral matter sank among the porous bodies which constitute an outer wall 6, as shown in drawing 6 . That is, unlike the 1st embodiment having formed the sinking-in part in some cellular structure objects, this embodiment forms a sinking-in part in some outer walls. In such honeycomb catalyst support 5, permeability becomes low rather than other partial 6b of the porous body from which sinking-in partial 6a constitutes an outer wall 6.

[0051] The honeycomb catalyst support of this embodiment can be manufactured by sinking into a part for the outermost periphery of predetermined thickness the organic substance of nonaqueous solubility burned down by combustion, or mineral matter, and forming a sinking-in part in it among the porous bodies which constitute an outer wall, after arranging the outer wall which consists of a porous body so that the periphery section of a cellular structure object may be covered.

[0052] In the 3rd embodiment, the organic substance of the nonaqueous solubility in which the whole porous body which constitutes an outer wall is burned down by combustion, or mineral matter may be the sinking-in part into which it sank. Such honeycomb catalyst support can be manufactured by sinking in the organic substance of nonaqueous solubility burned down by combustion in the whole porous body which constitutes an outer wall, or mineral matter, and forming a sinking-in part, after arranging the outer wall which consists of a porous body so that the periphery section of a

cellular structure object may be covered.
[0053] As the above-mentioned organic substance, the same thing as the 1st embodiment, for example, a petroleum system hydrocarbon oil, silicone oil, thermoplastics (an ethylene acetic-acid vinyl copolymer, polyethylene, etc.), thermosetting resin (phenol resin, epoxy resin, etc.), waxes (paraffin wax, ** and a vegetable wax, synthetic wax, etc.), or such mixture can be used suitably. The thing (a silica sol, alumina sol, etc.) which also has the above-mentioned mineral matter [be / the same as that of the 1st embodiment / it], for example, ceramic sols, alkyl silane compounds, or such mixture can be used suitably.
[0054] In addition, although a sinking-in part is formed in a part for the outermost periphery and the whole of predetermined thickness among the porous bodies which constitute an outer wall, the sinking-in part should just be formed that there is no clearance in a part for the outermost periphery of an outer wall in any case.
[0055] (4) The 4th embodiment
The 4th embodiment of this invention is the honeycomb catalyst support 5 in which it comes to form the coat which consists of an organic substance of nonaqueous solubility burned down by combustion, or mineral matter, as are shown in drawing 7 , and the periphery section of an outer wall 6 is covered. Namely, as for an outer wall, unlike the 3rd embodiment having formed the sinking-in part in some outer walls or the whole, this embodiment forms a coat separately. In such honeycomb catalyst support 5, permeability becomes low rather than the porous body from which a coat 8 constitutes an outer wall 6.
[0056] After arranging the outer wall which consists of a porous body so that the periphery section of a cellular structure object may be covered, the honeycomb catalyst support of this embodiment can be manufactured by making the organic substance of nonaqueous solubility burned down by combustion, or mineral matter adhere, and forming a coat so that the periphery section of an outer wall may be covered.
[0057] As an organic substance which constitutes a coat, natural rubber (latex) etc. can be used suitably and, specifically, it is possible to form a coat by thermoplastics (an ethylene acetic-acid vinyl copolymer, polyethylene, etc.), thermosetting resin (phenol resin, epoxy resin, etc.), waxes (paraffin wax, ** and a vegetable wax, synthetic wax, etc.), nature or composite rubber, the approach of applying these organic substances to the periphery section of an outer wall, etc.
[0058] Although it is not limited especially as long as permeability is lower than the porous body which constitutes an outer wall as mineral matter which constitutes a coat One sort or two sorts or more of ceramics (a silica, alumina, etc.) can be used suitably. Specifically After applying to the periphery section of an outer wall the ceramic slurry for coat formation which made the ingredient which uses ceramic powder as a principal component the shape of a slurry, it is possible to arrange a coat by the approach of drying this and calcinating by request etc. In order to make membranous permeability fall further, ceramic sols (a silica sol, alumina sol, etc.) etc. may be used together. After spreading, desiccation, etc. making the ceramic slurry for coat formation etc. the periphery section of an outer wall and producing a coat in it, arbitration can make the coat able to carry out count sinking in of the ceramic sol, and permeability can also be made to specifically fall to it further.
[0059] In the 3rd embodiment mentioned above and the 4th embodiment, it is desirable to make or less [0.04-micrometer] into two permeability of the outer wall with which the whole porous body which constitutes the outer wall containing a sinking-in part and an outer wall, or a coat was formed. If permeability exceeds 2 [0.04-micrometer], the migration by the side of the periphery of the honeycomb catalyst support of catalytic liquid (outer wall side) cannot be controlled, a crack may occur in an outer wall or an outer wall may exfoliate from a cellular structure object in it. In addition, the permeability of the porous body which constitutes an outer wall is usually about [0.045-0.1 micrometers] two.
[0060]
[Example] Hereafter, although an example explains this invention concretely, this invention is not limited to these examples.
[0061]
[Manufacture of a cellular structure object]
First, the cellular structure object was manufactured by the following approaches. Extrusion molding

of the plastic matter which adds and comes [mix and] to knead a shaping assistant, an ostomy agent, and water was carried out to the cordierite raw material powder which mixed talc, the kaolin, the alumina, the silica, etc. so that the presentation after baking might turn into a theoretical presentation (2MgO, 2aluminum2O3, and 5SiO2) of cordierite, and the cellular structure object (shaping desiccation object) was manufactured by drying. About this shaping desiccation object, ****** material was introduced into opening of two or more cels, and it considered as the cellular structure object (shaping desiccation object) of the structure which ******(ed) alternately the inlet-port side edge side B of two or more cels, and the outlet side end face C by ******** by drying (refer to drawing 4). After calcinating this cellular structure object (shaping desiccation object) and considering as a sintered compact, the grinding process removed the periphery section, the outer diameter was adjusted, and it considered as the cellular structure object with an outer diameter of 270mm. In addition, the die length of this cellular structure object is [0.3mm and the cel pitch of 305mm and septum thickness] 1.5mm.

[0062]

[Manufacture of honeycomb catalyst support]

(Example 1 of a comparison)

Applied to the peripheral face of the above-mentioned cellular structure object the ceramic coat material for outer wall formation (what made the ingredient which uses as a principal component the powder which comes to grind a cordierite sintered compact the shape of a slurry), it was made to harden by drying, and honeycomb catalyst support was obtained. Thickness of an outer wall was set to 0.75mm. As shown in Table 1, the permeability of 0.99 (micrometer2) and an outer wall part of the permeability for a cellular structure soma was 0.045 (micrometer2).

[0063]

[Table 1]

	ｾﾙ構造体含浸部分	外壁含浸部分	外壁被膜	触媒成分濃度(%)		外壁の剥離・ｸﾗｯｸ		・ｾﾙ構造体 ・ｾﾙ構造体＋含浸部分	・外壁 ・外壁＋含浸部分／被膜
				基材中心部	外壁部	剥離	ｸﾗｯｸ	透過性 k(μm²)	透過性 k(μm²)
比較例1	-	-	-	0.8	9.5	数カ所発生	多量発生	0.99	0.045
実施例1	ｼﾘｺｰﾝｵｲﾙ	-	-	3.8	2.0	なし	少量発生	0.55	-
実施例2	石油系炭化水素油	-	-	3.8	1.8	なし	少量発生	0.51	-
実施例3	ｼﾘｶｿﾞﾙ	-	-	3.1	2.5	なし	少量発生	0.62	-
実施例4	ﾊﾟﾗﾌｨﾝﾜｯｸｽ	-	-	4.2	1.7	なし	少量発生	0.45	-
実施例5	-	ｼﾘｺｰﾝｵｲﾙ	-	4.5	1.8	なし	なし	-	0.008
実施例6	-	石油系炭化水素油	-	4.7	1.5	なし	なし	-	0.007
実施例7	-	ｼﾘｶｿﾞﾙ	-	4.0	2.1	なし	僅かに発生	-	0.010
実施例8	-	ｱﾙｷﾙｼﾗﾝ化合物	-	3.6	2.2	なし	僅かに発生	-	0.028
実施例9	-	-	天然ｺﾞﾑ(ﾗﾃｯｸｽ)	4.8	1.2	なし	なし	-	0.009

[0064]
(Examples 1-4)
the periphery section whole of the above-mentioned cellular structure object -- silicone oil (trade name: -- dimethyl silicone oil / KF -- 96 to 1000 CS) the Shin-Etsu Chemical Co., Ltd. make, an example 1, and a petroleum system hydrocarbon oil (trade name: -- Diana process oil / paraffin series PW-90, and the Idemitsu Kosan, Inc. make --) By applying an example 2, a silica sol (trade

name: the Snow tex 40, the Nissan Chemical Industries, Ltd. make, example 3), and paraffin wax (trade name: the SP-3035/melting point of 60 degrees C, the NIPPON SEIRO CO., LTD. make, example 4) These were infiltrated into the cellular structure object and the sinking-in part was formed. In addition, since it was a solid-like about paraffin wax, and heated to the temperature of 70 degrees C and was liquefied, it applied.
[0065] Then, applied to the peripheral face of a cellular structure object the ceramic coat material for outer wall formation (what made the ingredient which uses as a principal component the powder which comes to grind a cordierite sintered compact the shape of a slurry), it was made to harden by drying, and honeycomb catalyst support was obtained. Thickness of an outer wall was set to 0.75mm. As shown in Table 1, the permeability of the cellular structure object containing a sinking-in part was respectively set to 0.55 (micrometer2), 0.51 (micrometer2), 0.62 (micrometer2), and 0.45 (micrometer2), and all became low from 0.99 (micrometer2) of the example 1 of a comparison which did not form a sinking-in part.
[0066]
(Examples 5-8)
The ceramic coat material for outer wall formation (what made the ingredient which uses as a principal component the powder which comes to grind a cordierite sintered compact the shape of a slurry) was applied to the peripheral face of the above-mentioned cellular structure object, and it was made to harden by drying. Thickness of an outer wall was set to 0.75mm. then, the periphery section whole of an outer wall -- silicone oil (trade name: -- dimethyl silicone oil --) KF96-1000CS, the Shin-Etsu Chemical Co., Ltd. make, an example 5, and a petroleum system hydrocarbon oil (trade name: -- Diana process oil --) paraffin series PW-90, the Idemitsu Kosan, Inc. make, an example 6, and a silica sol (trade name: -- the Snow tex 40 and the Nissan Chemical Industries, Ltd. make --) Honeycomb catalyst support was obtained by applying an example 7 and an alkyl silane compound (trade name: the protection gel WS 405, DEGUSAJAPAN, Inc., example 8), infiltrating these into an outer wall, and forming a sinking-in part. As shown in Table 1, the permeability of the outer wall containing a sinking-in part was respectively set to 0.008 (micrometer2), 0.007 (micrometer2), 0.010 (micrometer2), and 0.028 (micrometer2), and all became low from 0.045 (micrometer2) of the example 1 of a comparison which did not form a sinking-in part.
[0067]
(Example 9)
The ceramic coat material for outer wall formation (what made the ingredient which uses as a principal component the powder which comes to grind a cordierite sintered compact the shape of a slurry) was applied to the peripheral face of the above-mentioned cellular structure object, and it was made to harden by drying. Thickness of an outer wall was set to 0.75mm. Then, honeycomb catalyst support was obtained by applying natural rubber/latex (trade name: HYLATEX-HA / high ammonia type, the Nomura trade incorporated company make) to the whole periphery section of an outer wall, making it adhere to an outer wall, and forming a coat (0.2mm in thickness). As shown in Table 1, the permeability of the outer wall with which the coat was formed was set to 0.009 (micrometer2), and became lower than 0.045 (micrometer2) of the example 1 of a comparison which did not form a coat.

[0068]
[Penetrable measurement]
About the honeycomb catalyst support of the above-mentioned example 1 of a comparison, and examples 1-9, permeability was measured by the following approaches using the capillary flow porometer (Capillary Flow Porometer).
[0069] First, about the example 1 of a comparison, and examples 1-4, the measurement sample with a cellular structure object and a phi30mmx thickness [of the sinking-in part] of 0.3mm was prepared, and the measurement sample with a phi30mmx thickness [of an outer wall and its sinking-in part, or a coat] of 0.8mm was prepared about the example 1 of a comparison, and examples 5-9.
[0070] Subsequently, by pinching each measurement sample from the upper and lower sides with a phi20mm O ring, the seal was carried out, and it set so that the compressed air might not leak. Furthermore, the compressed air was introduced from each measurement sample bottom (a pressure up is carried out gradually in the pressure range of 0-1psi), and the air flow rate (deltaQ: outflow air

flow rate) which flows out from each measurement sample bottom was measured. The measurement result was substituted for the following formula (1), and permeability k (micrometer2) was computed. In addition, it carried out to mu= 18.24 (muPa and second), L= 0.3 (mm) or 0.8 (mm), and A= 3.142 (cm2) (since the outer diameter of an O ring is phi20mm). The result is shown in Table 1.
[Equation 10]

$$k = \frac{\mu \cdot L}{A} \cdot \left(\frac{\Delta Q}{\Delta P} \right) \qquad \cdots (1)$$

k：透過性（μm^2）

μ：２０℃における空気の粘性係数（μＰａ・秒）

Ｌ：サンプル厚（ｍｍ）

Ａ：サンプルの空気透過面積（cm^2）

△Ｑ／△Ｐ：流出空気流量／圧縮空気圧の傾き（（ｃｃ／秒）／ｐｓｉ）

[0071] In addition, **Q/**P of the above-mentioned formula (1) : the inclination (cc/second) (/psi) of an outflow air flow rate / compression pneumatic pressure The relation between the pneumatic pressure (it is a pressure up gradually in the pressure range of 0-1psi) introduced from each measurement sample bottom and the air flow rate which flows out from each measurement sample bottom is measured. Let the inclination within the limits from which introductory pneumatic pressure and an outflow air flow rate change linearly proportionally be the inclination of a **Q/**P:outflow air flow rate / compression pneumatic pressure. Moreover, "psi" which is the unit of pneumatic pressure means a pound / square inch, and is 1psi=6894.76Pa.
[0072]
[Catalyst support]
After infiltrating into the honeycomb catalyst support of the above-mentioned example 1 of a comparison, and examples 1-9 catalytic liquid (the water solution / 25% concentration of the nitrate system currently indicated by JP,10-128118,A etc.), it dried within the 110-degree C constant temperature dryer, and burned with the 550-degree C electric furnace, and the septum which divides the cel of honeycomb catalyst support was made to support a catalyst component. And the sample was started from a cellular structure object core and the outer wall section, inductive-coupling RF plasma emission spectrometry (ICP) of each sample was carried out, and catalyst constituent concentration was measured (quantum). The result is shown in Table 1.
[0073]
[Result]
(Example 1 of a comparison)
As shown in Table 1, the catalyst constituent concentration of the cel structure core which contributes to the emission-gas-purification engine performance is low, and the catalyst constituent concentration of the outer wall section which does not contribute to the emission-gas-purification engine performance has become high conversely. That is, concentration distribution of the catalyst component in each part of honeycomb catalyst support was uneven. Moreover, much exfoliations of the crack in an outer wall and an outer wall occurred.
[0074]
(Examples 1-4)
As shown in Table 1, the catalyst constituent concentration fall of the cel structure core which contributes to the emission-gas-purification engine performance could be controlled, and catalyst

constituent concentration of the outer wall section which does not contribute to the emission-gas-purification engine performance was able to be made low. That is, concentration distribution of the catalyst component in each part of honeycomb catalyst support was able to be equalized. Moreover, exfoliation of an outer wall was not accepted at all, but was sharply controlled also about the crack initiation in an outer wall. That is, generating of a crack and the exfoliation of an outer wall in an outer wall were able to be prevented effectively.

[0075]

(Examples 5-8)

As shown in Table 1, the catalyst constituent concentration fall of the cel structure core which contributes to the emission-gas-purification engine performance could be controlled, and catalyst constituent concentration of the outer wall section which does not contribute to the emission-gas-purification engine performance was able to be made low. That is, concentration distribution of the catalyst component in each part of honeycomb catalyst support was able to be equalized. Moreover, exfoliation of an outer wall was not accepted at all, but was sharply controlled also about the crack initiation in an outer wall. That is, generating of a crack and the exfoliation of an outer wall in an outer wall were able to be prevented effectively.

[0076]

(Example 9)

As shown in Table 1, the catalyst constituent concentration fall of the cel structure core which contributes to the emission-gas-purification engine performance could be controlled, and catalyst constituent concentration of the outer wall section which does not contribute to the emission-gas-purification engine performance was able to be made low. That is, concentration distribution of the catalyst component in each part of honeycomb catalyst support was able to be equalized. Moreover, exfoliation of an outer wall and the crack initiation in an outer wall were not accepted at all. That is, generating of a crack and the exfoliation of an outer wall in an outer wall were able to be prevented effectively.

[0077]

[Effect of the Invention] As explained above, the honeycomb catalyst support of this invention Since the organic substance of nonaqueous solubility burned down by combustion in a part for the outermost periphery of predetermined thickness or mineral matter forms the sinking-in part into which it sank among the porous bodies which constitute a cellular structure object in the cellular structure object which constitutes honeycomb catalyst support In a catalyst support process, it becomes possible to be able to prevent effectively generating of a crack and the exfoliation of an outer wall in an outer wall, and to equalize concentration distribution of the catalyst component in each part of honeycomb catalyst support.

[Brief Description of the Drawings]

[Drawing 1] It is the typical sectional view which cut the honeycomb catalyst support of this invention along with the medial axis.

[Drawing 2] It is the sectional view which cut the honeycomb catalyst support equipped with the outer wall at the flat surface perpendicular to the medial axis.

[Drawing 3] It is the sectional view which cut the cellular structure object which constitutes the honeycomb catalyst support of this invention at the flat surface perpendicular to the medial axis.

[Drawing 4] It is the typical sectional view of the cellular structure object of the structure which ******(ed) two or more cels by ******** alternately.

[Drawing 5] It is the typical sectional view which cut the honeycomb catalyst support of this invention along with the medial axis.

[Drawing 6] It is the typical sectional view which cut the honeycomb catalyst support of this invention along with the medial axis.

[Drawing 7] It is the typical sectional view which cut the honeycomb catalyst support of this invention along with the medial axis.

[Description of Notations]

1, 21, 41 [-- 5 A septum 25 / -- 6 Honeycomb catalyst support 26 / -- An outer wall, 7 / -- An interlayer, 8 / -- A coat, 42 -- ******.] -- A cellular structure object, 1a, 6a -- A part besides sinking-in part, 1b, and 6b--, 3, 23, 43 -- A cel, 4, 24, 44

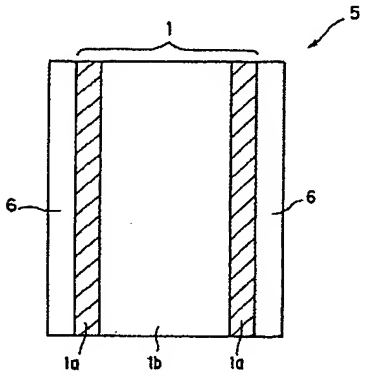
[Translation done.]

* NOTICES *

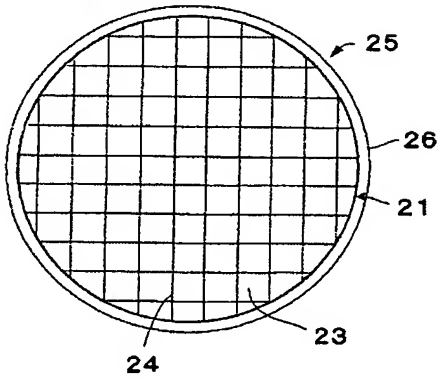
1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DRAWINGS

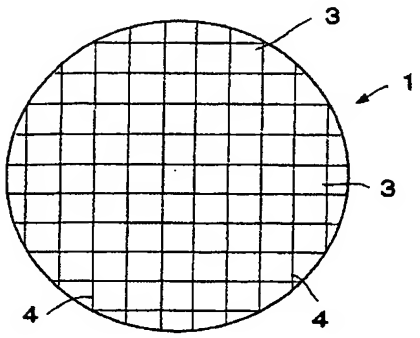
[Drawing 1]



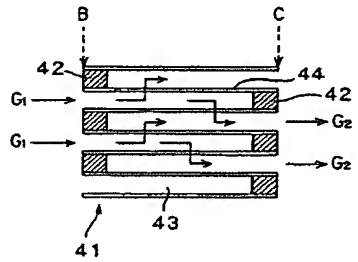
[Drawing 2]



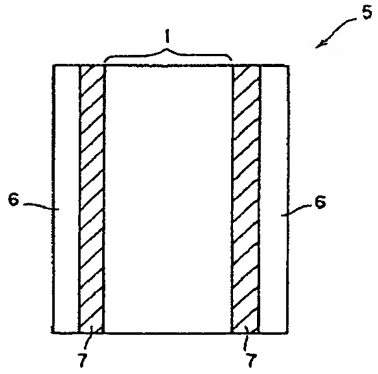
[Drawing 3]



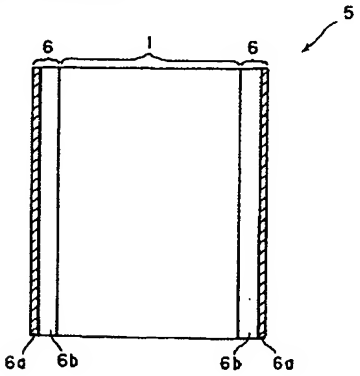
[Drawing 4]



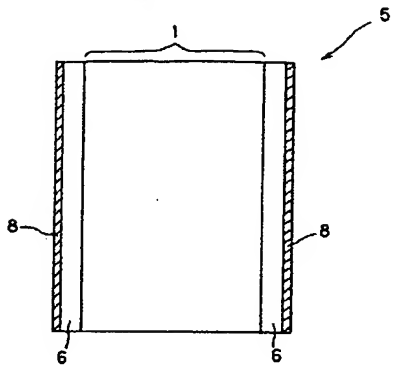
[Drawing 5]



[Drawing 6]



[Drawing 7]



[Translation done.]